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# Range extension of *Scorpaena inermis* (Scorpaeniformes: Scorpaenidae) in the southwestern Atlantic

**Carolina Cerqueira de Paiva**[1*], **Daniel Lino Lippi**[2], **Rodrigo Antunes Caires**[3], **Elisabeth Cabral Silva-Falcão**[2] and **Maria Elisabeth de Araújo**[2]

1 Universidade Federal do Ceará, Instituto de Ciências do Mar, Laboratório de Ecologia Animal, Avenida da Abolição 3207, CEP 60165-081, Fortaleza, CE, Brazil
2 Universidade Federal de Pernambuco, Departamento de Oceanografia, Avenida Arquitetura s/n, CEP 50740-550, Recife, PE, Brazil
3 Universidade de São Paulo, Museu de Zoologia, Laboratório de Peixes, Avenida Nazaré 481, CEP 04263-000, São Paulo, SP, Brazil
* Corresponding author. E-mail: carolinacdp@gmail.com

**Abstract:** *Scorpaena inermis* is recorded for the third time in the southwestern Atlantic. The known previous records of the species from Brazilian coast was collected Alagoas and Rio Grande do Norte states, prior of which the species was supposed to occur only in the northwestern Atlantic, from Georgia, USA, to Suriname and French Guiana. Here we report on two specimens that were collected in the northeastern Brazil and were deposited in Brazilian institutions. These new reports of *S. inermis* in Brazilian waters extend the geographic distribution of this species in the western Atlantic and the interval of three morphometric features.

**Keywords:** marine fish, geographic distribution, Brazil

The genus *Scorpaena* Linnaeus, 1758, currently comprises 14 described species in the western Atlantic (Eschmeyer 2014); *Scorpaena inermis* Cuvier, 1829, is recorded from Georgia, USA to Suriname and French Guiana, including the Gulf of Mexico, the Bahamas, and the Caribbean Sea by Eschmeyer (1965, 1969), Uyeno et al. (1983), Poss and Eschmeyer (2003), McEachran and Fechhelm (2005), and Smith-Vaniz and Jelks (2014). According to Rob Robins (pers. comm.), the Florida Museum of Natural History houses a voucher from French Guiana (FLMNH 4427). Ramos (1987/89, 1994) reported the first record of the species from the southwestern Atlantic (UFPB 01740), collected at 24 m of depth off the coast of Alagoas state (10°00′ S, 035°56′ W) and *S. inermis* was included in a recent checklist of coastal fishes of Rio Grande do Norte state, northeastern Brazil, (Garcia-Júnior et al. 2015).

This paper reports two new records of *S. inermis* from the southwestern Atlantic, extending the geographic distribution of this species and contributing to a better understanding of the ichthyofauna occurring in the Brazilian Northeastern Region.

The specimen from Pernambuco was collected by researchers with seine net (5 mm mesh), in mangroves, at about 1.5 m deep. The specimen from Bahia was collected around clumps of drift algae over reefs, between 6 and 8 m deep. Both samples were fixed in formaldehyde 10%, preserved in ethanol 70% and deposited in the Marine Chordate Collection of the Dr. Petrônio Alves Coelho Oceanographic Museum of the Pernambuco Federal University (MOCH), and the Zoology Museum of the São Paulo University (MZUSP). Morphometric and meristic characters were taken following Eschmeyer (1969) and Poss and Eschmeyer (2003). Institutional abbreviations follow Sabaj Perez (2014), with the exception of the Marine Chordate Collection of the Dr. Petrônio Alves Coelho Oceanographic Museum of the Pernambuco Federal University (MOCH).

Material examined: MOCH 1508, Brazil, Pernambuco, Rio Formoso, Rio Ariquindá, 08°41′46.98″ S, 035°06′ 19.26″ W, 13 December 2012, 45.9 mm standard length (SL) (Figure 1). MZUSP 61159, Brazil, Bahia, Abrolhos, Corumbau, Recifes Itacolomis, 16°53′00″ S, 039°02′00″ W, 16 November 1999, 41.7 mm standard length (SL).

Description of the two new specimens: D. XII.9 1/2; A. III.5; P. 19-20; V. I–5; lateral line scales 25; vertical scale rows (above lateral line) 43; 47; gill rakers (including rudiments) 4–5+7–8 (Figure 2). Measurements in percent of SL: body depth 33.8; 35.0; head length 44.2; 44.4; orbit diameter 15.7; 15.9; interorbital width 3.5–4.7; snout length 9.2; 11.5; upper jaw length 21.8; 22.0; predorsal-fin length 36.7; 40.3 and pectoral-fin length 32.6; 44.9. Head scaled, strongly ossified; no occipital pit at top of head; mushroom-like cirri on dorsal part of the cornea (Figure 3). Preorbital with two spines; three suborbital spines; spinous ridge formed by suborbital bones two and three with one spine each; five preopercular spines, first one the longest but extending less half way to posterior margin of

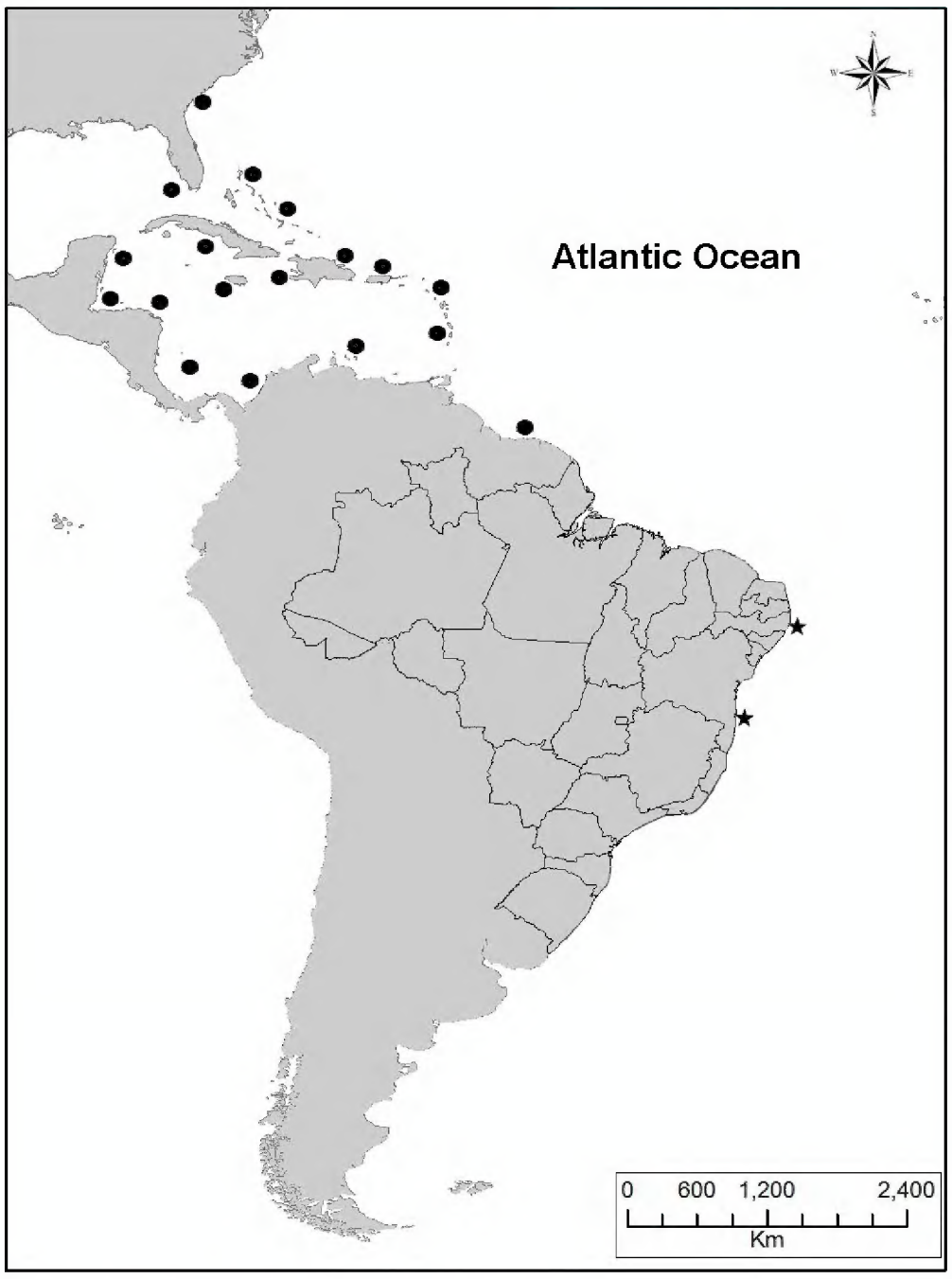


**Figure 1**. Geographical distribution of *Scorpaena inermis* (black circles = previous records; stars = new record).

**Figure 2**. *Scorpaena inermis* (MOCH 1508, 45.9 mm SL) collected in Pernambuco, northeastern Brazil.

operculum; supplemental preopercular spine absent; supraocular and postocular spines present. Mouth terminal and superior, upper jaw reaching vertical through the posterior margin of the pupil; palatine teeth present. Body covered with cycloid scales; lateral line of tubed scales, complete and extending to caudal-fin anterior margin. Color of preserved material: dorsum and flanks dark brown, with five vertical irregular dark bars extending horizontally from above the operculum to base of caudal fin and vertically from dorsum, which is darker, to middle of flanks. Ventral region pale yellow. Dorsal fin with distal margin dark and anal, caudal, pectoral and ventral fins with two vertical dark bars.

Morphometric differences between the specimens we examined and Eschmeyer (1965) were noticed: head length varies between 46-50% of SL in Eschmeyer but an interval of 44.2–44.4% of SL was detected in the two specimens examined. The upper jaw length varies between 24–26% of SL and the predorsal length, 40–47% of SL, in Eschmeyer, but upper jaw length range of 21.8–22.0% of SL and predorsal length of only 36.7% of SL were found in our specimens. Head length, upper jaw length, and predorsal length, are features found in Eschmeyer (1965) species key, as complementary data to separate *S. inermis* from *S. calcarata,* but only nine specimens were

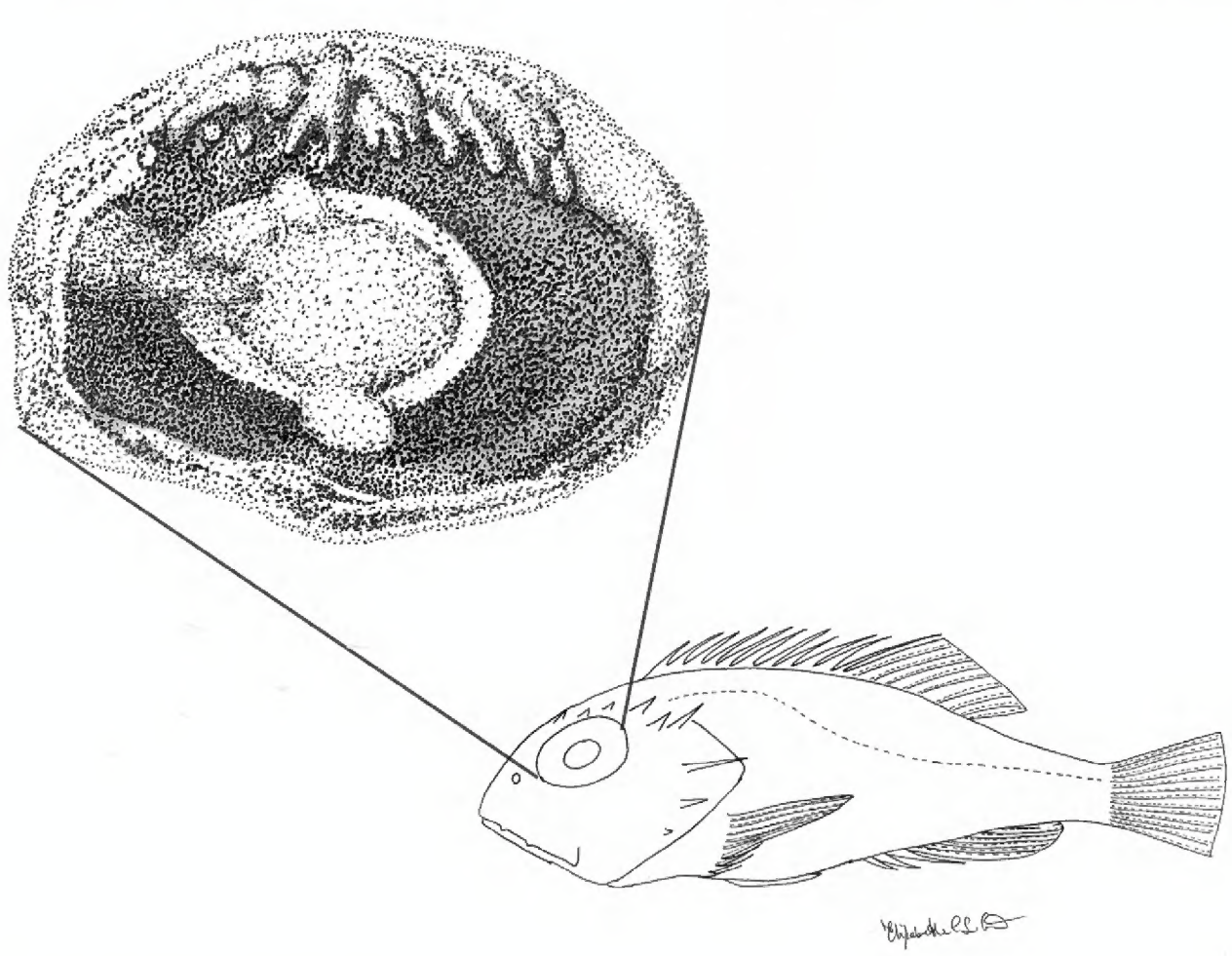

**Figure 3**. Mushroom-like cirri on dorsal part of the cornea.

analyzed by this author concerning the head length, ten for upper jaw length, and 11 for predorsal length, all from Western Central Atlantic populations, not including the area from where the present new material was caught. Besides, all of the others features were according to the literature and the most important morphology to identify this species, the mushroom-shaped skin flaps on dorsal part of eye, were observed in both specimens.

Among the 11 species of *Scorpaena* that are occur in the Brazilian coast (Menezes et al. 2003; Ramos 1982,1984), four were deposited in the Marine Chordate Collection of the Dr. Petrônio Alves Coelho Oceanographic Museum of the Pernambuco Federal University: *S. isthmensis* ($n$ = 5), *S. calcarata* ($n$ = 1), *S. brasiliensis* ($n$ = 10) and *S. plumieri* ($n$ = 1). Most of the specimens are from expeditions developed in the 1960 and 1970 decades, a few collected in the 1990s. The inclusion of *S. inermis* voucher increases the diversity of the genus of this collection.

Therefore, the analyzed material of *S. inermis,* extends the range of the species for additional 900 km southwards, increase the interval of three morphometric features, and the knowledge of the biodiversity of northeastern Brazil, adding new stimuli to the importance of zoological collections.

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## LITERATURE CITED

Eschmeyer, W.N. 1965. Western Atlantic scorpionfishes of the genus *Scorpaena*, including four new species. Bulletin of Marine Science 15: 85–164.

Eschmeyer, W.N. 1969. A systematic review of the scorpionfishes of the Atlantic Ocean (Pisces: Scorpaenidae). Occasional Papers of the California Academy of Sciences 79:1–143. https://archive.org/details/occasionalpapers79cali

Eschmeyer, W.N. (ed.). 2014. Catalog of fishes: genera, species, references. Accessed at http://research.calacademy.org/research/ichthyology/catalog/fishcatmain.asp, 10 July 2014.

Garcia-Júnior, J., M.F. Nóbrega and J.E.L. Oliveira. 2015. Coastal fishes of Rio Grande do Norte, northeastern Brazil, with new records. Check List 11: 1659. doi: 10.15560/11.3.1659

McEachran, J.D. and J.D. Fechhelm. 2005. Fishes of the Gulf of Mexico, Volume 2. Scorpaeniformes to Tetraodontiformes. Austin: University of Texas Press. 1004 pp.

Menezes, N.A. and J.L. Figueiredo. 2003. Família Scorpaenidae; pp.72–73, in: N.A. Menezes, P.A. Buckup, J.L. Figueiredo and R.L. Moura (eds). Catálogo das espécies de peixes marinhos do Brasil. São Paulo: Museu de Zoologia da USP.

Poss, S.G. and W.N. Eschmeyer. 2003. Scorpaenidae; pp.1232–1265, in: K.E. Carpenter (ed.). The living marine resources of the Western Central Atlantic. Volume 2, bony fishes, part 1 (Acipenseridae to Grammatidae). Rome: FAO and American Society of Ichthyologists and Herpetologists.

Ramos, R.T.C. 1987/1989. Novas ocorrências de peixes marinhos demersais para a costa nordeste do Brasil. Trabalhos Oceanográficos da Universidade Federal de Pernambuco 20: 197–202.

Ramos. R.T.C. 1994. Análise da composição e distribuição da fauna de peixes demersais da plataforma continental da Paraíba e estados vizinhos. Revista Nordestina de Biologia, 9(1): 1–30.

Sabaj Pérez, M.H. (ed.). 2014. Standard symbolic codes for institutional resource collections in herpetology and ichthyology: an online reference. Version 5.0., American Society of Ichthyologists and Herpetologists, Washington, DC. Accessed at http://www.asih.org/, 22 September 2014.

Smith-Vaniz, W. and H.L. Jelks. 2014. Marine and inland fishes of St. Croix, U. S. Virgin Islands: an annotated checklist. Zootaxa 3803: 1–120. doi: 10.11646/zootaxa.3803.1.1

Uyeno T., K. Matsuura and E. Fujii. 1983. Fishes trawled off Suriname and French Guiana. Tokyo: Japan Marine Fishery Resource Research Center. 519 pp.

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